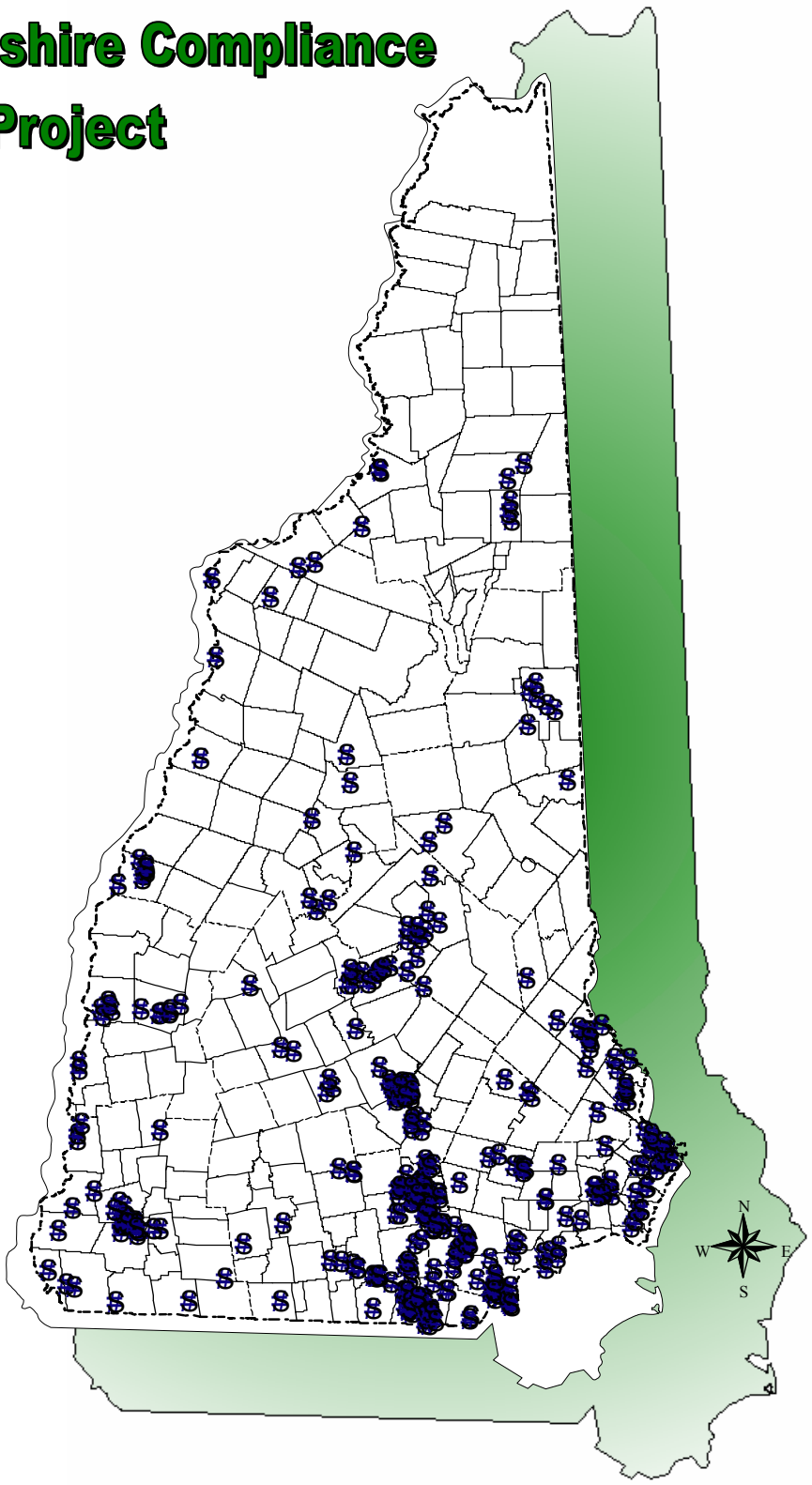
New Hampshire Compliance Measures Project

April 2003

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

EPA



Acknowledgements

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April 2003

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Historically, environmental regulatory agencies have relied on "output" (activity-based) measures to assess compliance. Such measures fail to capture the full range of an agency's compliance assurance activities and reflect little about the effectiveness of such efforts or about rates of compliance in the regulated community. To address this problem, the US Environmental Protection Agency ("EPA") Office of Enforcement and Compliance Assurance and the NH Department of Environmental Services ("DES"), have worked to develop program specific "outcome" measures to create a more complete picture of agency performance.

The entire project was conducted in two phases. Phase I consisted of a review of the existing RCRIS database to determine its usefulness in analyzing compliance rates and trends. Phase II consisted of compliance surveys, data analysis, and restructuring of the data collection process within the DES Waste Management Division Hazardous Waste Compliance Section ("Compliance Section"). The major accomplishments and findings based upon analysis of the data include the following:

- 10% of the regulated community was visited,
- Partnering with a trade association (New Hampshire Auto Dealers Association) to ensure compliance is underway,
- 18% of the database was inactivated,
- 5% of the NH SQGs (CESQGs) visited generated wastes at higher levels than notified,
- The overall compliance rate for the state is 65%,
- The highest compliance rates are for aisle space and waste characterization,
- The lowest compliance rates are for training and emergency postings,
- There were significant differences in behavior between NH FQGs and NH SQGs,
- Key compliance measures include inspections, waste characterization and periodic assessments,
- Personal Digital Assistants (PDAs) will facilitate the collection and processing of inspection information,
- An automated system now exists to capture all inspection information and
- Approximately 32.5 work-hours/inspection and 40 work-hours/program summary report will be saved because of this project.

The Compliance Measures Project is considered a success by the Compliance Section specifically and by DES as a whole. One of the most significant accomplishments is the optimization of efficiency in conducting inspections and preparing reports. It is anticipated that because of these gains, a larger percentage of the regulated universe can be inspected by staff. In addition, data on current generator behavior has been collected using a statistically valid method. The Compliance Section will now be able to develop future program directions on statistically valid compliance data and measure their influence on compliance behavior in the regulated community over time.

New Hampshire Compliance Measures Project Summary

PART 1: Background and Project Description

Historically, environmental regulatory agencies have relied on "output" (activity-based) measures to assess compliance. This included counting the number of inspections conducted, the number of enforcement cases pursued, and the total amount of penalties assessed. Such measures fail to capture the full range of an agency's compliance assurance activities and reflect little about the effectiveness of such efforts or about rates of compliance in the regulated community. To address this problem, the US Environmental Protection Agency ("EPA") and state environmental agencies, including the NH Department of Environmental Services ("DES"), have worked to develop program specific "outcome" measures to create a more complete picture of agency performance. To encourage this new approach, EPA's Office of Enforcement and Compliance Assurance ("OECA") developed a competitive grant program to fund state proposals. DES was awarded one of the grants to develop the Performance Measures Project ("Project"). This report provides a summary of the Project undertaken by DES.

The hazardous waste compliance program typically uses inspection reports and enforcement actions to document generator behavior relative to compliance with the New Hampshire Hazardous Waste Rules. The data is entered into EPA's RCRIS database, and is maintained as hard copy files at DES's office. Originally, it was anticipated that these sources of data could be analyzed to generate program-specific compliance measures that reflected generator behavior better than traditional output measures; the compliance measures would then be analyzed over time to provide an assessment of agency performance. The first phase of the project consisted of a review of the historical compliance data in EPA's RCRIS database to determine whether existing data was adequate to support statistically valid analyses of generator compliance rates and, if not, whether the data could reasonably be supplemented so as to support such analyses. DES determined that the RCRIS data did not support compliance measures for several important reasons. First, the data was not collected randomly, since the Compliance Section performs targeted inspections (by sector or geographic location). Second, the data that was collected was not comparable, since full and partial inspections gathered different types of information. Third, the classification system used by RCRIS was too broad to meet the needs for program-specific compliance measures. However, the final recommendations from the first phase did identify what data collection, management and analysis procedures could be implemented to allow DES to more accurately describe generator behavior and thus develop compliance measures.

The second phase of the Project consisted of two key components: the development of a standard methodology for conducting compliance inspections and evaluations, and the development of a data management system that would support hazardous waste compliance measures. The workgroup that oversaw the Project was composed of DES staff representing strategic planning, enforcement and compliance assurance, information management and technology, data management, pollution prevention, and hazardous waste compliance. The multidisciplinary nature of the

workgroup played a critical role in ensuring that the Project progressed and was completed on time. The first task for the workgroup was to develop the list of compliance-related questions on generator behavior that would ultimately serve as the compliance measures. It was envisioned that these questions would be included in all inspections, so that data collected in the future would remain comparable over time. In order to select the questions, the workgroup considered the requirements of the New Hampshire Hazardous Waste Rules and to what degree non-compliance with those rules presented a risk to human health and the environment. The workgroup also considered the use of questions related to generator behavior that could serve as surrogate compliance measures, *i.e.* behaviors that when implemented could result in a reduction in risk to human health and the environment. The result was a "Hazardous Waste Partial Compliance Evaluation" checklist that contained ten (10) questions. Three of the questions addressed pollution prevention (toxicity reduction) and beyond-compliance behaviors (periodic assessments and housekeeping), acting as surrogate measures of compliance. The other seven questions were based directly on requirements in the New Hampshire Hazardous Waste Rules, acting as direct measures of compliance. The questions addressing behavior related to training, inspections, labeling, container management, preparedness and prevention, and waste characterizations. A copy of the compliance evaluation is included in Appendix A.

Part 2 of this report briefly describes the approach taken to conduct compliance evaluations and summarizes the benefits of the project, including the data cleanup effort in the DES Manifest Tracking System ("MTS") by the DES Waste Management Division Reporting and Information Management Section ("RIMS"). Part 3 of the report provides the results of the evaluations, including appropriate statistical analyses (frequency distributions, T-tests, analysis of variance, linear regression analysis and factor analysis) of the behavior of the generators relating to the New Hampshire Hazardous Waste Rules, pollution prevention, and "beyond compliance" activities. Part 4 of the report provides a description of the revised inspection procedures and data management system developed to support the long-term collection and analysis of data to institutionalize the use of hazardous waste compliance measures. Part 5 of the report provides recommendations for conducting future compliance evaluations, program-specific compliance measures and other recommendations.

PART 2: Compliance Evaluations and Data Clean Up

Overview of Compliance Evaluations

Three summer interns were hired by DES to conduct the compliance evaluations throughout a ten week period during the summer of 2002. The interns received training (in-house and field based) prior to beginning their work. Results of the compliance evaluations were used to determine baseline behavior of generators relating to the New Hampshire Hazardous Waste Rules, pollution prevention, and "beyond compliance" activities. The evaluations were conducted at 429 facilities throughout the state. (See Appendix B for a map of sites). Within a period of ten weeks, 404 hazardous waste generators and 25 generators of used oil were visited and evaluated. This represented

approximately 10% of the regulated universe in the state. In comparison, within the past ten years a total of 306 inspections (full and partial) have been conducted by DES hazardous waste inspection staff.

The following benefits were derived from the project:

- Determining compliance rates for hazardous waste generators,
- Conducting outreach with individual generators and industry groups,
- Identifying areas for which additional outreach/training is needed,
- Screening for full inspections,
- Creating Department visibility (field presence),
- Observing overall generator behavior and
- Obtaining more accurate data and cleaning up the MTS database.

Although the evaluations were brief, lasting approximately one hour (compared to day-long full inspections and half-day partial inspections), they served as an effective screening process. In total, 22 generators that currently present a significant risk have become candidates for full inspections to meet the FFY 2003 inspection commitment. The evaluations made DES visible to businesses that had never been inspected before, and prompted them to place a higher priority on achieving compliance within the facility, thereby reducing the number of facilities that could present a risk to human health and the environment. The visit also served as generator outreach, as information packets and contact information (RCRA Hotline and Web Page) were provided to the generators. Approximately 75 generators called in for additional information and consultation as a result of the evaluations. Visiting many sites in a short period of time quickly revealed where outreach was most needed and provided ideas for future outreach projects. To date, several meetings have been held with the New Hampshire Auto Dealers Association ("NHADA") to discuss a joint project to assist NHADA members to achieve and maintain compliance. This has resulted in the NHADA hiring a full time environmental health and safety specialist to conduct semi-annual on-site compliance evaluations with approximately 450 members that generate hazardous waste. In addition, a local waste hauler, Advanced Liquid Recycling, has issued letters to its clients regarding proper management and disposal of residue from parts washers and paint gun cleaners. Also as a result of the survey, hazardous waste staff is working on a regulatory interpretation regarding the management and disposal of used oil and solvents.

Reporting and Information Management Section Data Cleanup

The DES Reporting and Information Section initiated the Summer 2002 Data Cleanup Project concurrently with the OECA Compliance Measures Project. The data cleanup project was developed to identify and confirm the status of New Hampshire sites with an active EPA Identification Number and to georeference the database. The following resulted from this project:

- 1,257 duplicate sites have been identified,
- 406 GIS points have been corrected or removed from the coverage,

- More than 650 GIS points have been collected by RIMS staff and
- 967 sites have been inactivated, resulting in a more accurate MTS database.

The overall data cleanup project has been a success, reducing the total number of listed active sites by 18% to 4,577. The chart in Appendix C (based on the table below) shows the number of generators, by size, before and after the project, including any new generators added during this time period.

Generator Size	Count as of 5/1/02	Count as of 8/26/02
Fed. LQG	**193**	**195**
Fed. SQG	**462**	**421**
Fed. CESQG	**4,769**	**3,961**
TOTALS	**5,424**	**4,577**

PART 3: Results of the Compliance Measures Project

Project Planning and Design

The goal of the project was to gather information that would provide an understanding of generator behavior relating to compliance with the New Hampshire Hazardous Waste Rules and from this to identify compliance measures. In addition to gaining an understanding of current behavior, it was envisioned that the data gathered from the Summer 2002 effort would serve as a "baseline" that could then be compared to behavior in future years in several ways. For example, the baseline can be compared to the data from future inspections to develop trends in compliance over time. Additionally, changes in behavior can be observed and quantified before and after programmatic changes. For example, as of January 1, 2003, all Full Quantity Generators ("FQGs", equivalent to federal Large Quantity Generators ("LQGs) and Small Quantity Generators ("SQGs") combined) in New Hampshire must have a hazardous waste coordinator who has been certified by DES. The certified coordinator will be responsible for ensuring that the generator is in compliance with all applicable requirements, and will have to receive state-sponsored hazardous waste training in order to maintain certification. Data collected after implementation of this requirement can be used to determine if the behavior of FQGs has changed (significantly) as a result of the program.

Prior to developing the final list of questions on current generator behavior, the workgroup wanted to be certain of what types of statistical analysis could be performed on the data. To accomplish this, a review of historical compliance data was conducted to determine the variance associated with the data set. From this, the minimum number (minimum "n") of facilities that would need to be evaluated to support the statistical analysis was calculated based upon a 90% confidence level. It was determined that a sample size of sixty (60) New Hampshire FQGs would be needed. The same figure was used as the minimum "n" for the New Hampshire SQGs (equivalent to Federal Conditionally Exempt SQGs ("CESQG")). Facilities for evaluation were randomly

selected using a random number generator from the 5,424 hazardous waste generators listed in DES's MTS database. In total, 429 sites were visited, of which 365 facilities were evaluated for compliance with the New Hampshire Hazardous Waste Rules (39 facilities were declassified and 25 facilities had only used oil on site). Of the 365 sites evaluated, 83 were NH FQGs (22 LQGs and 61 SQGs) and 282 were NH SQGs (CESQGs). There were some limitations to the data collected at the 365 sites. These limitations are described in detail in Appendix D. Due to these limitations, data from the remaining 184 sites was used for the final analysis. The sites included 71 NH FQGs (21 LQGs and 50 SQGs) and 113 NH SQGs (CESQGs), with 29 of the latter 113 sites using the extended storage provisions contained in the Hazardous Waste Rules. Prior to analysis, numeric proportional data was arcsine transformed and descriptive data (Yes/No) was converted using the convention Yes = 1 and No = 0. The numeric data set met the requirements for parametric analysis. In cases where parametric analysis could not be performed because of the sample size of the subsets of data, frequency distributions were used. Numeric proportional values were used to calculate compliance rates, while actual numeric values were used to calculate percent compliance. Factor analysis (principle component analysis) on the descriptive data was used for the development of the compliance measures. A rating system with values from 1-5 was used to evaluate generator "compliance" with the surrogate measures (pollution prevention and beyond compliance).

The questions that could be answered with the data set were as follows:

1) What percentage of generators have improperly notified their generator status?
2) What are the relative distributions of violations identified during evaluations?
3) What are the overall compliance rates and percent of compliance for NH FQGs, NH SQGs, LQGs, SQGs and CESQGs?
4) What are the compliance rates and percent compliance for each type of violation for NH FQGs, NH SQGs, LQGs, SQGs and CESQGs?
5) Is there are significant difference in compliance rates for each type of violation between NH FQGs and NH SQGs?
6) What is the frequency of "compliance" with pollution prevention, and beyond compliance activities for NH FQGs, NH SQGs, LQGs, SQGs and CESQGs?
7) Are there key compliance measures that can be used to assess the effectiveness of the program?

Results

Facilities with change in generator status

Of the 429 generators evaluated, 69 (approximately 16%) were not generating wastes at the rate that had been indicated on their notification forms. The changes in facility status (using federal classifications) are as follows and are graphically depicted in Appendix E:

Facilities Notified As:	That Actually Were:
LQG	SQG – 2 (8%)
	CESQG – 1 (4%)
	Declassified – 2 (8%)
SQG	CESQG – 12 (19%)
	Declassified – 6 (10%)
CESQG	LQG – 1 (<1%)
	SQG – 14 (4%)
	Declassified - 31 (10%)

As can be seen, the greatest percentage change was for SQG facilities that should have been classified as a CESQG facility (12 of 63, approximately 19%). However, the most important statistic were the 15 facilities (5%) that had notified as a CESQG facility and were generating wastes at LQG or SQG levels. There are currently a total of 3,590 CESQG facilities in the State of New Hampshire. The data suggests that as many as 165 CESQG facilities (5%) could be improperly notified and presenting a potential threat to human health and the environment. Since CESQGs historically have not been given a high priority for inspection, it is recommended that more resources be directed to this portion of the regulated community to ensure that facilities operating "under the radar screen" are in compliance with the hazardous waste rules.

Relative comparison of violation data

The data was summarized to determine the relative distributions of violations for all generators, for NH FQGs and for NH SQGs. Pie charts depicting this data are contained in Appendix F. For all generators, the most common violation was the failure to label containers with the words "Hazardous Waste." For NH FQGs, the most common violation was failure to document training for primary and secondary emergency coordinators. For NH SQGs, the most common violation was failure to label containers with the words "Hazardous Waste." The low violation rate for hazardous waste determinations for all three groups can be attributed to the method used by evaluators to answer the question. Specifically, the facility was deemed to be in non-compliance if there were unknowns in the Main Storage Area. It is anticipated that if thorough hazardous waste determinations were conducted this percentage would have been higher.

Overall Compliance

The overall compliance rate and percent compliance were calculated as an average of all the values for the seven direct measures of compliance (training, inspections, labels, aisle space, closed, emergency postings, characterization) for the various generator classes. It should be noted that of the 113 NH SQGs (CESQGs), 29 facilities were using the extended storage provisions which would require training, inspections and emergency postings at the facility. The overall percent compliance for all generators in the state was 65%, with NH FQGs at 65% compliance and NH SQGs at 65% compliance. Using the federal generator classification system, LQGs were in compliance 76% of the time, SQGs 60% of the time and CESQGs 65% of the time. It should be noted that the number of NH SQG Extended Storage facilities positively influenced the overall percent compliance for NH SQGs and CESQGs. The calculation of compliance rates yielded similar values, with all generators in the state having a compliance rate of 58, NH FQGs having a compliance rate of 59 and NH SQGs having a compliance rate of 57. Under the federal classification system, LQGs had a compliance rate of 67, SQGs had a compliance rate of 56 and CESQGs had a compliance rate of 57. The overall percent compliance and compliance rate for Summer 2002 will be compared to the overall rates from future evaluations to determine trends in compliance behaviors over time.

Compliance by Violation Type

New Hampshire Full Quantity Generators and Small Quantity Generators:

The compliance rate and percent compliance were calculated as an average of the values for each of the seven direct measures of compliance for the various generator classes. As seen in the graphs in Appendix G, the compliance rates and percent compliance for NH FQGs was consistently higher than NH SQGs. The highest rates of compliance and percent compliance for both NH FQGs and NH SQGs were for aisle space and characterization of wastes. The lowest rates of compliance and percent compliance for both NH FQGs and NH SQGs were for training, emergency postings and inspections. It is suspected, based upon discussions with generators, that the reason for the low rates of compliance among NH SQGs for training, emergency postings and inspections can be attributed to the classification as a SQG Extended Storage facility. Many of the extended storage facilities were not aware of their status, or the additional requirements that are imposed, including training, emergency postings and inspections.

Studentized T-tests determined that there were differences in behavior between the NH FQGs and NH SQGs in regards to the seven specific requirements of the NH Hazardous Waste Rules. Specifically, NH FQGs had significantly higher ($p<0.10$) compliance rates and percent compliance for meeting the requirements for training, inspections, labeling, containers closed and in good condition, emergency postings and waste characterization. NH FQGs and NH SQGs did not differ significantly for compliance rates or percent compliance for meeting the requirements for aisle space.

Linear regression analysis indicated that there was no correlation between training and any other compliance measures.

Federal Large Quantity Generators, Small Quantity Generators and Conditionally Exempt Small Quantity Generators:

The compliance rates and percent of compliance for LQGs was higher than SQGs and CESQGs for all types of violations with the exception of aisle space. Additionally, SQGs consistently had higher compliance rates and percent compliance than CESQGs for all violation types. All three generator classes had their highest compliance rates and percent compliance for waste characterization, aisle space and container closed/condition. Conversely all three generator classes had their lowest compliance rates and percent compliance for emergency postings and training. These results are similar to the results using the New Hampshire classification system, however, more detail is provided about LQGs and SQGs, as separate classes. The data shows that LQGs have low compliance with emergency postings and trainings (50% and 56% respectively). The low compliance with emergency postings may be due to this being a state specific requirement and not a federal requirement. The low compliance with training may be due to several reasons. First, there is a common misconception among generators that federally required OSHA 1910.120 Emergency Response training qualifies as hazardous waste management training. Second, many generators will receive initial training and several annual updates, but fail to continue long-term training because new information is not presented.

Compliance with Surrogate Measures

Ratings were given to generators for their efforts to reduce toxicity, conduct periodic assessments and to practice good housekeeping. For all three measures, NH FQGs consistently scored higher than NH SQGs, however the differences were not significant. The results following the federal classification system were similar, such that LQGs consistently scored higher than SQGs, and SQGs consistently scored higher than CESQGs. Linear regression analysis indicated that there was no correlation between any of the surrogate measures and any compliance measures.

Performance Measures

A factor analysis was conducted to determine if there were interrelationships between the violations. The factor analysis does not determine what the relating factors are, but only indicates that some “factor” does exist that creates a relationship. The justification for the factor, or interrelationship, must be postulated by the person conducting the analysis. The results of the factor analysis can allow for the development of key compliance measures which can serve to indicate compliance with other compliance measures. The factor analysis, as contained in the table below, provided three compliance measures. First, the results indicate that inspections can serve as an indicator of compliance with training, labels, emergency postings and containers closed and in good condition. One would assume that if inspections are being conducted, that the generator was made aware of this requirement as a result of training. In addition, the

purpose of an inspection is to ensure that all preparedness, storage and labeling requirements are met. Second, waste characterization can serve as an indicator of compliance with aisle space and containers closed and in good condition. Typically, generators that have a thorough knowledge of their waste streams tend to manage their hazardous wastes more carefully, thus leading to compliance with storage and labeling requirements. Third, periodic assessments can serve as an indicator of good housekeeping and efforts to reduce toxicity. Typically periodic assessments are part of an overall management system implemented at a facility. It should be no surprise that a facility that undertakes this type of effort would also pay attention to such details as good

Violation Type	RCRIS Code	Factor 1	Factor 2	Factor 3
Inspections	GMC	**0.883**	-0.005	0.194
Training	GPR	**0.832**	0.129	0.216
Labeling	GPT	**0.704**	0.236	0.221
Emergency postings	GCP	**0.646**	-0.231	0.286
Closed/condition	GMC	**0.503**	**0.579**	-0.009
Characterization	GHW	0.076	**0.84**	0.081
Aisle space	GPP	-0.079	**0.809**	0.08
"Surrogate" violation				
Assessments		0.122	0.174	**0.831**
Housekeeping		0.286	-0.219	**0.69**
Toxicity Reduction		0.28	0.235	**0.671**

housekeeping and would research ways to reduce toxicity and volume of their wastes.

PART 4: Revisions to Inspection Procedures and Development of Data Management Systems

The intent behind the revision to inspection procedures is to gather consistent data over time for use as compliance measures, to make the data collection and management as efficient as possible and to reduce the amount of time necessary to create written inspection reports and thereby allow more time for inspectors to have contact with the regulated community.

Historically, inspection data was collected from two types of inspections, full inspections and partial inspections. These two inspection formats yielded different data. The challenge was to initiate a standard data collection process that would consistently provide identical information on generator behavior over time for use as compliance measures. The new data collection process consists of the partial compliance evaluations and inspections using a standardized format. All data collected using a partial compliance evaluation can also be collected using the standardized inspection format.

To support future data collection, data management and report preparation, an approach was taken that uses Personal Digital Assistants (PDAs) and automated report preparation, both supported by an Oracle database. Using the Oracle database, compliance measures can be developed and a variety of queries on generator behavior can be conducted for program analysis. Currently, annual program reports address 30 types of generator behavior. In the future, annual program reports can address 62 types of generator behavior. An example of categories of Existing and Future Program Analysis is contained in Appendix H.

PART 5: Conclusions and Recommendations

There were numerous "lessons learned" and accomplishments as a result of the Project. Below is a listing of the recommendations for improving the summer survey, followed by a listing of the accomplishments and findings from the project.

The following are suggestions made by the evaluators to improve future compliance evaluation efforts:

- Provide more initial training to the evaluators,
- Provide multi-media generator summaries to evaluators,
- Initially identify a larger number of generators to evaluate,
- Re-word evaluation sheet questions and the evaluation sheet itself and
- Include additional materials in the information packets.

The following are the major accomplishments and findings based upon analysis of the data:

- 10% of the regulated community was visited,
- Partnering with a trade association to ensure compliance is underway,
- 18% of the database was inactivated,
- 5% of NH SQGs (CESQGs) visited generated wastes at higher levels than notified,
- The overall compliance rate for the state is 65%,
- The highest compliance rates are for aisle space and waste characterization,
- The lowest compliance rates are for training and emergency postings,
- There were significant differences in behavior between NH FQGs and NH SQGs,
- Key compliance measures include inspections, waste characterization and periodic assessments,
- The HWCS will use PDAs to gather inspection information,
- An automated system now exists to capture all inspection information and
- Approximately 32.5 work-hours/inspection and 40 work-hours/program summary report will be saved because of this project.

The Compliance Measures Project is considered a success by the Compliance Section specifically and by DES overall. One of the most significant accomplishments is the optimization of efficiency in conducting inspections and preparing reports. It is anticipated that because of these gains, a larger percentage of the regulated universe can be inspected by staff. A second major accomplishment is the use of abbreviated evaluations to screen facilities for compliance with the New Hampshire Hazardous Waste Rules. The screening identified 22 facilities (5%) that warranted follow up with full inspections, thereby quickly directing staff resources to those facilities which pose the greatest threat to human health and the environment.

Bibliography

Miller, William G., PhD. "Users Manual for OPENSTAT and LINUXOSTAT", January 2002

United States Environmental Protection Agency, Office of Enforcement and Compliance Assurance "Guide for Measuring Compliance Assistance Outcomes", EPA300-B-02-011, June 2002

Appendix A

Hazardous Waste Partial Compliance Evaluation

Hazardous Waste Partial Compliance Evaluation

RCRA ID # _____

Notification Information

Contact Name: _____

Business Name: _____

Street: _____

_____

Town: _____

County: _____

Zip code: _____ ***Phone #:*** _____

Reported Generator Size: _____

Confirmed Generator Size: ☐FQG1 (LQG) ☐FQG2 (SQG) ☐ SQG (CESQG)

Primary NAIC: _____ ***Secondary NAIC:*** _____

Evaluation Information

Contact Name: _____

Title: _____

Phone #: _____

Located Within WHPA? _____ ***GPS?*** _____

Date of Last Inspection by RCRA: _____

Generator Status: ☐ ACTIVE ☐ INACTIVE

Does The Company Have A Written EMS Or Is ISO 14000 Certified? _____

Years This Type of Operation: _____

Years At The Facility As Employee: _____

Number of Employees at Facility: _____

		Yes	No	NA*	Yes = 5, No = 1-4
1.	**Has the company made efforts within the past 5 years to reduce the toxicity or volume of its hazardous waste?** *Comments:* _____	☐	☐		1 2 3 4 5
2.	**Does the management conduct periodic facility-wide assessments to determine environmental compliance?** *Documentation:* _____	☐	☐		1 2 3 4 5
3.	**Can the facility document that the primary and alternate emergency coordinators have received hazardous waste management training over the past two years?**	☐	☐	☐	# ____ of ____
4.	**Are inspections of main hazardous waste storage area(s) being documented?**	☐	☐	☐	# ____ of ____
5.	**Are all containers of hazardous waste labeled with the words "hazardous waste"?**	☐	☐		# ____ of ____
6.	**Is there a distance of 2 feet of access (aisle) space on at least one side of each container of hazardous waste?**	☐	☐		# ____ of ____
7.	**Is the hazardous waste being stored in containers that are closed and free of significant damage and deterioration?**	☐	☐		# ____ of ____
8.	**Does the facility have emergency postings at the telephone nearest to its main hazardous waste storage area(s)?**	☐	☐	☐	# ____ of ____
9.	**Have all existing waste streams been characterized?**	☐	☐		# ____ of ____
10.	**Does the facility practice good general housekeeping?** ***(aisles clear, floors swept, etc.)*** *Comments:* _____	☐	☐		1 2 3 4 5

***NA applies to SQG's only**

I certify that on _____ *, 2002 a representative of the New Hampshire Department of Environmental Services conducted a compliance evaluation at the above referenced facility. I am in receipt of a copy of the results of this evaluation and recognize my responsibility under the Hazardous Waste Rules (Env-Wm 100-1100) to correct the deficiencies found during this evaluation.*

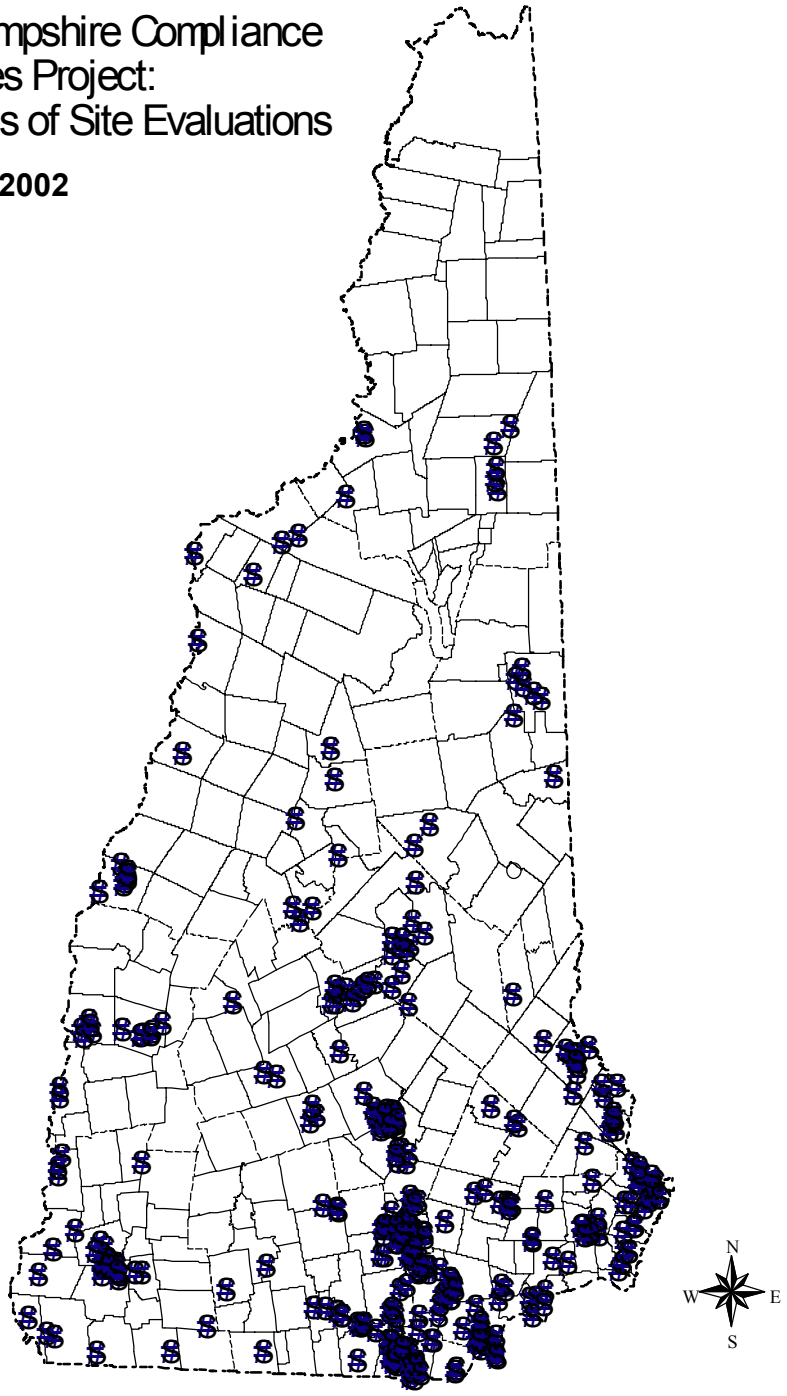
Generator Signature: _____ **Evaluator Signature:** _____

Appendix B

New Hampshire Compliance Measures Project: Location of Site Evaluations

New Hampshire Compliance Measures Project: Locations of Site Evaluations

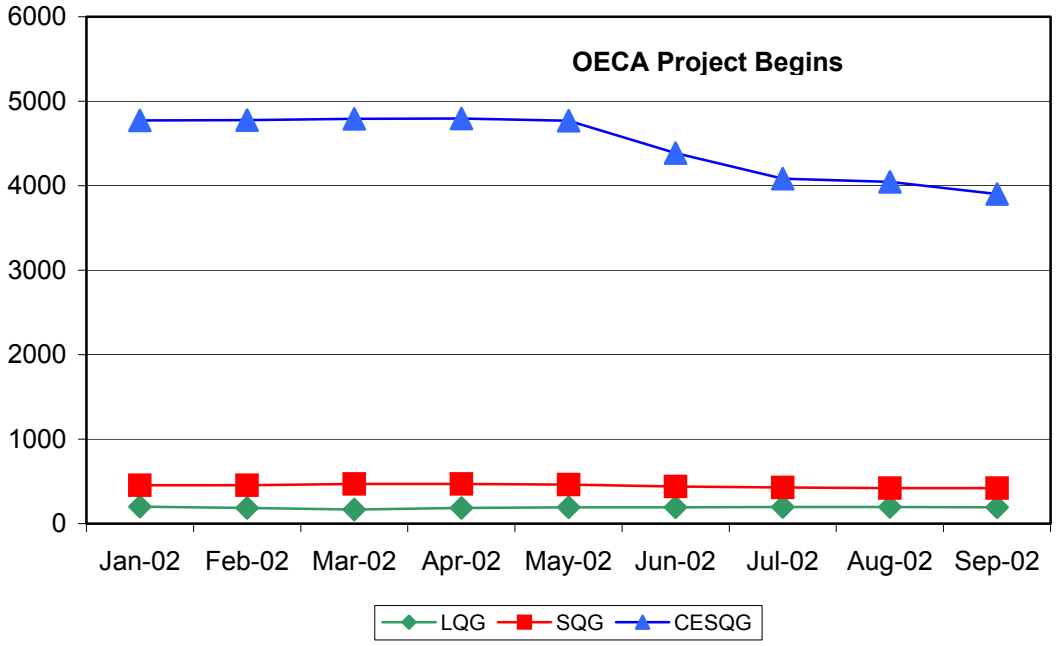
Summer 2002



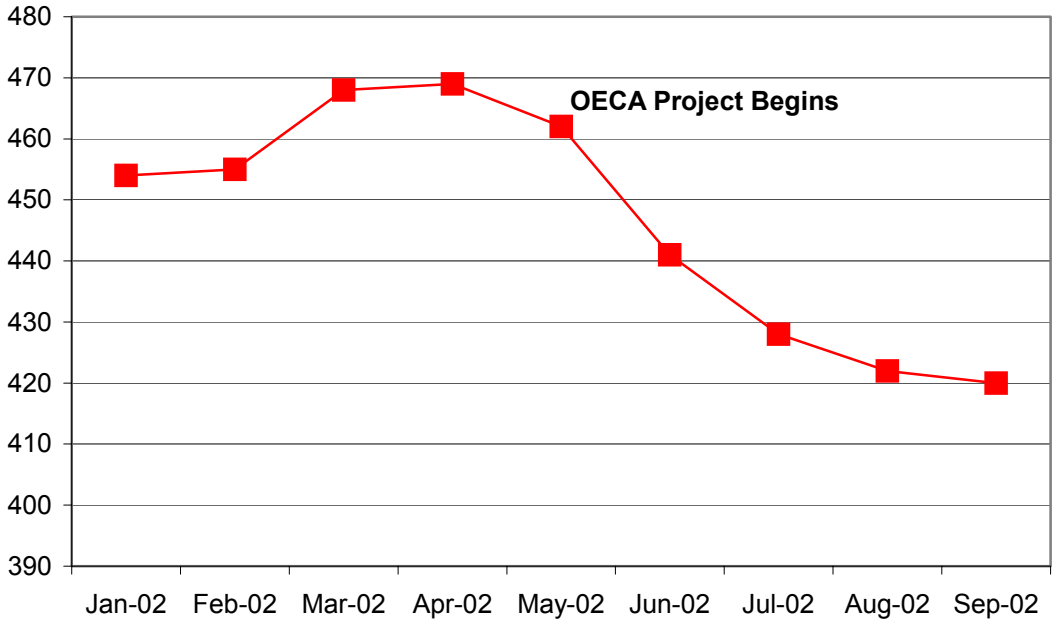
Appendix C

Active New Hampshire Generators

Active NH Haz. Waste Generators



Active Federal Small Quantity Generators



Appendix D

Descriptions of Limitations of Facility Information

Description of Limitations of Facility Information

Facilities that yielded no compliance data

There were several types of facilities that did not yield any compliance data. These included 25 sites where the only waste was used oil, 39 sites where the generators were no longer generating hazardous waste and which were declassified, and 58 sites using silver recovery systems only.

Used Oil Only: Because used oil is generally managed as a recyclable hazardous waste, the used oil-only sites were visited and given information packets but the evaluation was not completed. However, the evaluators made observations regarding the management of used oil. These observations were entered into the database and shared with the used oil program. For future studies, the workgroup should investigate the benefits of including used oil generators in the study, since time spent on these facilities could have been used to evaluate more sites that would yield additional baseline compliance data.

Sites Declassified: The greatest number of declassifications occurred at CESQGs (31, 9.8%), followed by SQGs (6, approximately 9.5%), and LQGs (2, approximately 7.7%). These 39 facilities represent approximately 0.7% of generators in the MTS database prior to the data clean-up effort and approximately 9.1% of the facilities visited, giving an indication of the degree to which the database contains incorrect information. This is most likely due to generators not knowing their responsibility to declassify. When this percentage is applied to the entire MTS database prior to the data clean-up effort, it predicts that approximately 490 sites are no longer generating waste and should be declassified, but are still in the database.

Silver Waste Only: The generators having only silver waste represent approximately 15% (9/61) of SQGs approximately 17% (47/282) of CESQGs and approximately 5% (2/39) of the declassified sites. Since silver is managed as a precious metal being recovered, these sites were visited and given information packets but the evaluation was not completed. However, the evaluators made observations regarding the management of silver, which were entered into the database. For future studies, the workgroup should investigate the benefits of including silver waste only generators in the study, since time spent on these facilities could have been used to evaluate more sites that would yield additional baseline compliance data.

Facilities that yielded limited compliance data

There were two types of facilities that yielded limited compliance data. These included 125 generators that had parts washers as the sole source of hazardous waste and 35 generators with no waste on site at the time of the inspection. For questions pertaining to container labeling and management, and hazardous waste determinations, the generators were given default values of "Yes" (*i.e.*, in compliance) while recognizing that no waste was on site (0 out of 0 containers).

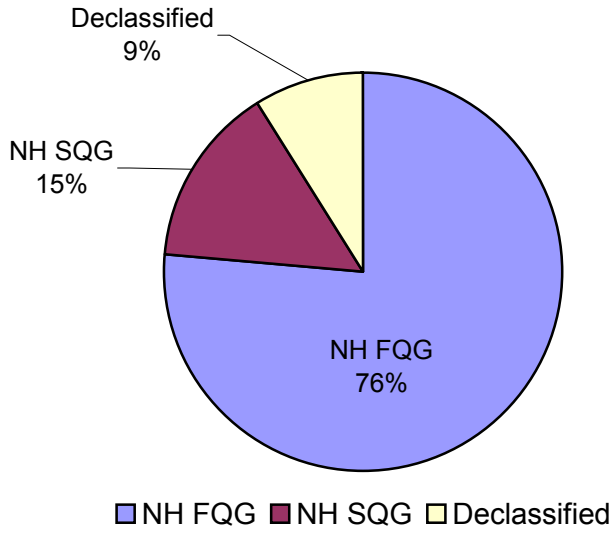
Parts Washers Only: The parts washers only generators represented approximately 5% (1/22) of LQGs approximately 3% (2/61) of SQGs, and approximately 43% (122/282) of CESQGs. In most instances, when the evaluations were conducted the solvent contained in the parts washer was in use as a product. Consequently, no actual compliance data was obtained. However, generators were advised of proper management, labeling, and hazardous waste determination requirements, and were given an information packet. Since this particular group represents such a large portion of the regulated universe, consideration should be given as to whether to include facilities that generate only waste from parts washers in the future.

No On-Site Wastes: The generators that did not have any waste on site at the time of the evaluation represented approximately 9.6% (35/365) of the facilities evaluated. Consequently, no compliance data was obtained.

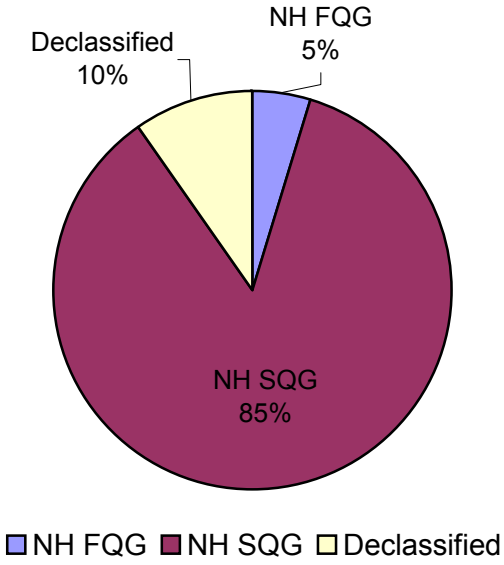
Appendix E

Changes in Generator Status

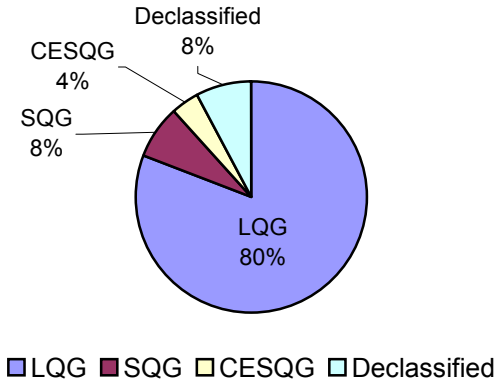
NH FQG change in generator status-Summer 2002



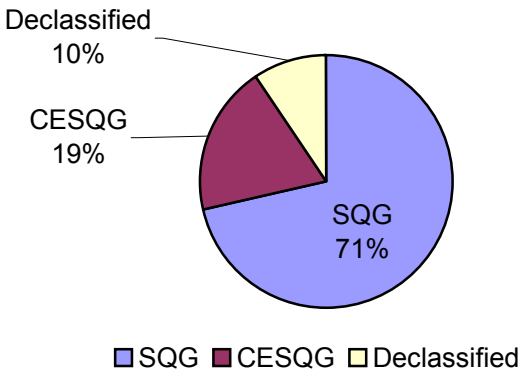
NH SQG change in generator status-Summer 2002



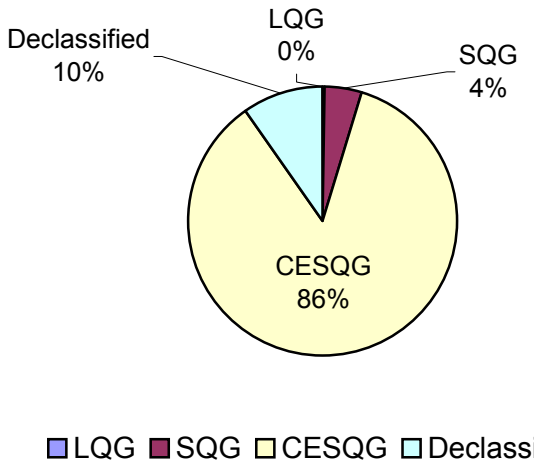
LQG change in generator status-Summer 2002



SQG change in generator status-Summer 2002



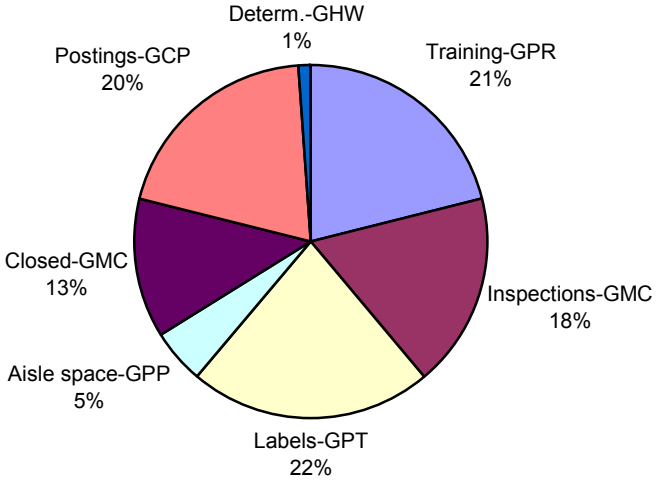
CESQG change in generator status-Summer 2002



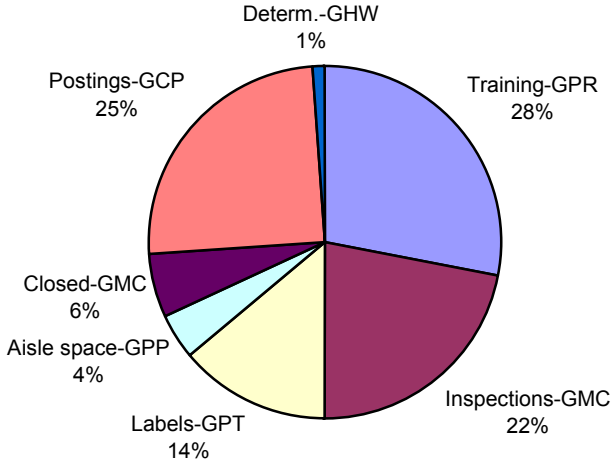
Appendix F

Summer 2002 Violation Summaries

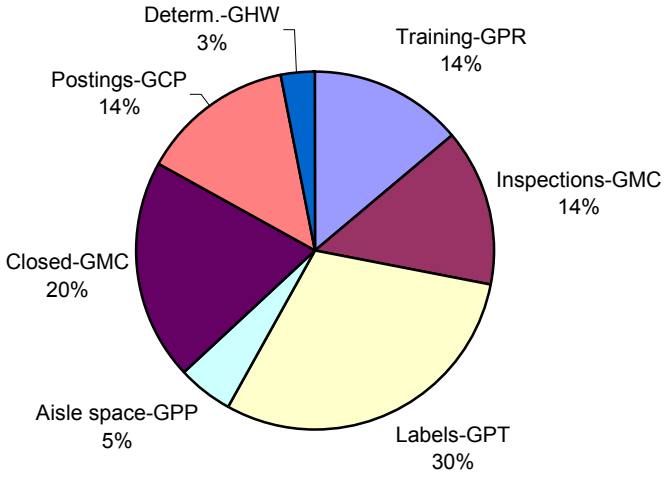
Violation Summary-All Generators-Summer 2002



Violation Summary-NH FQGs-Summer 2002



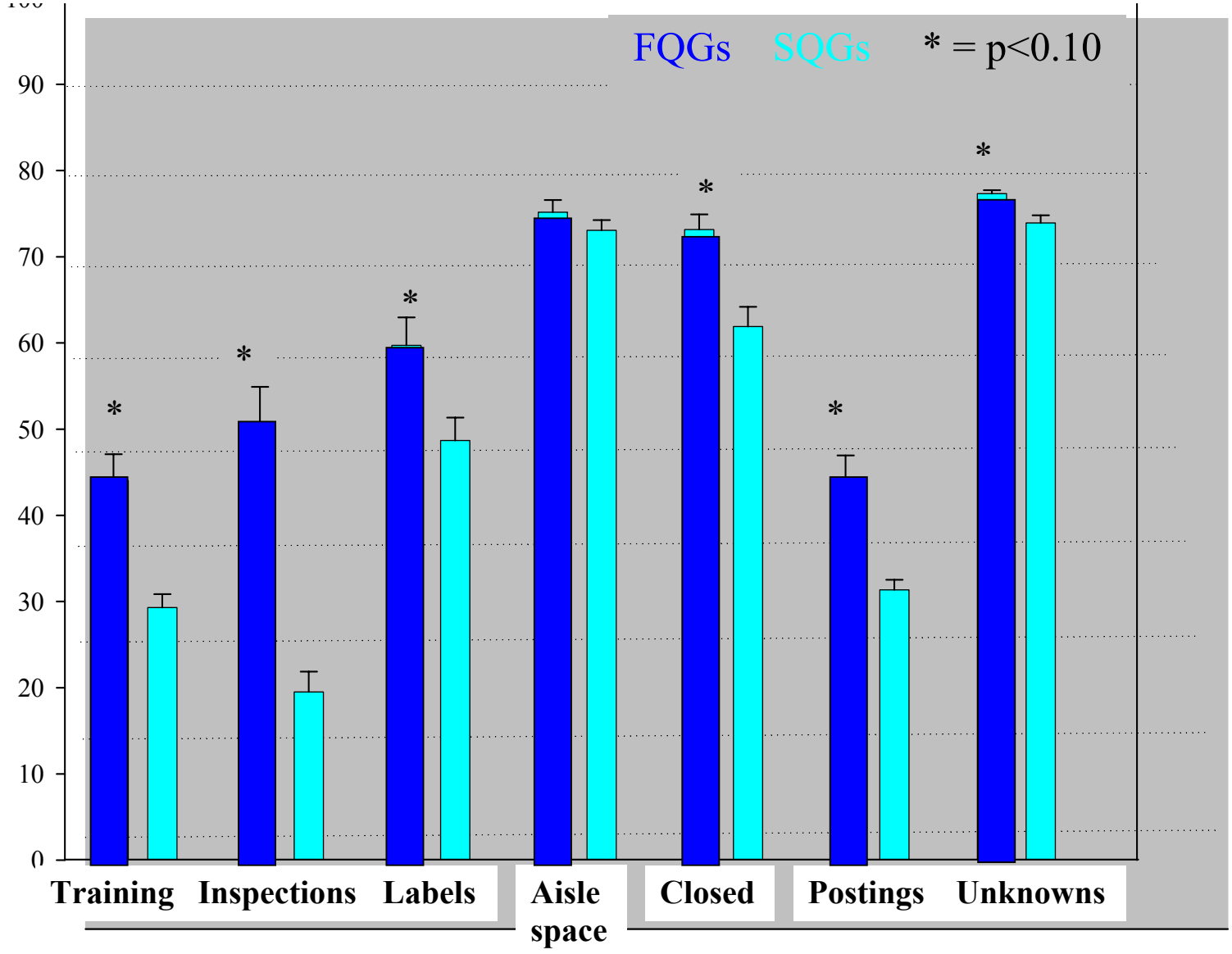
Violation Summary-NH SQGs-Summer 2002



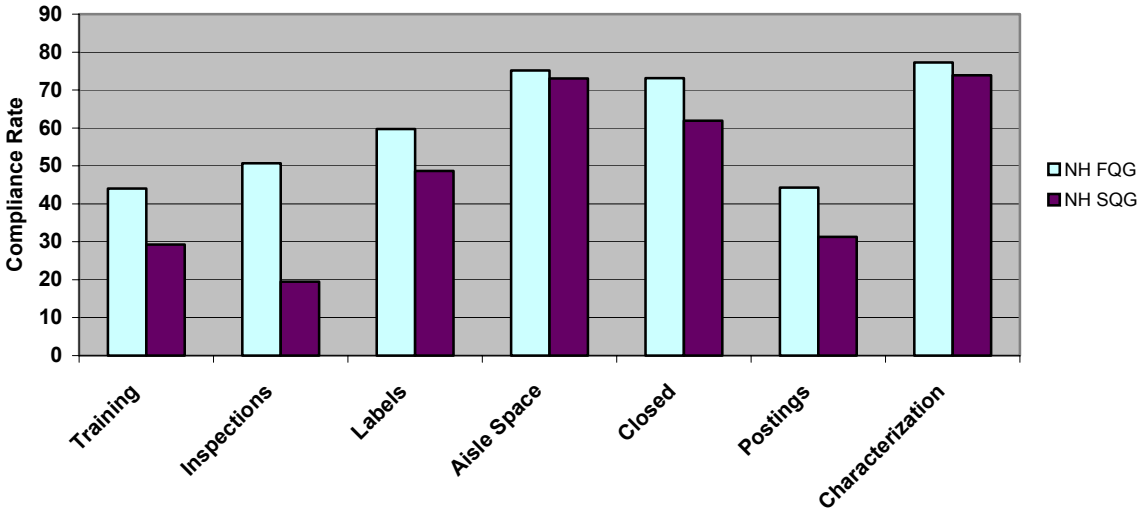
Appendix G

Compliance Rates and Percent Compliance by Violation Type

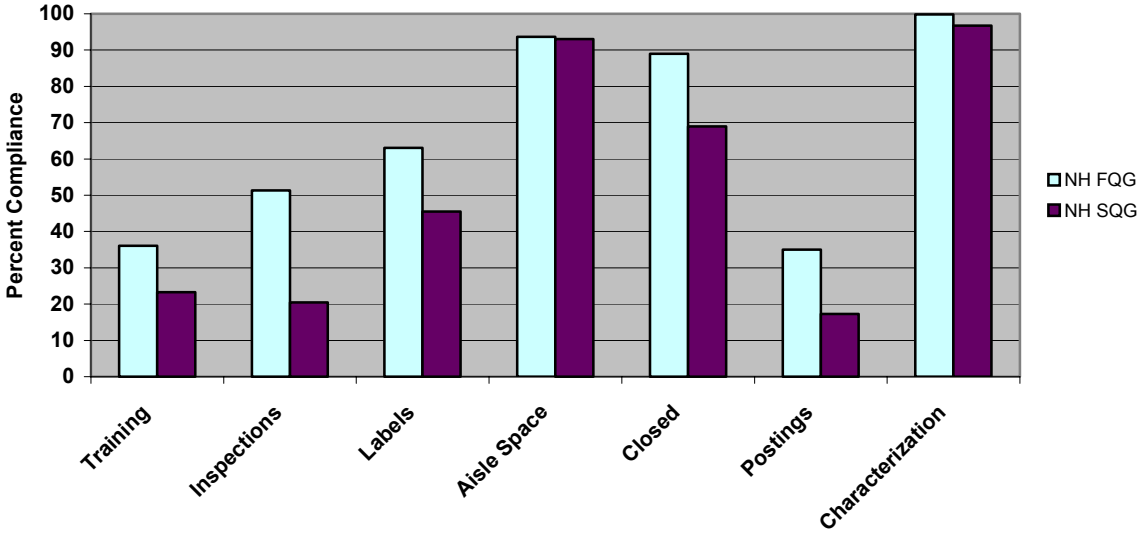
Compliance rates for NH FQGs and NH SQGs by Violation Type



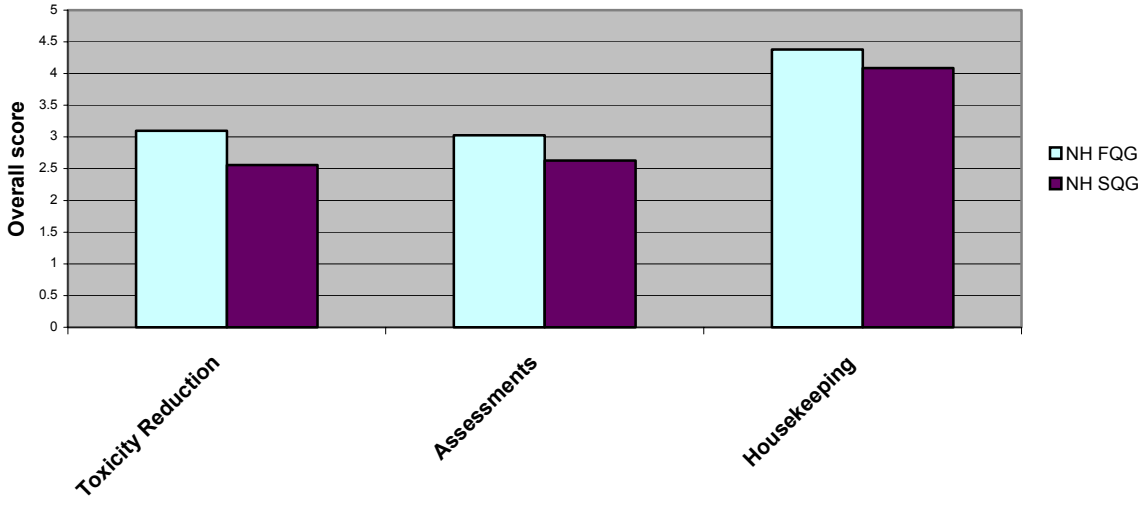
Compliance Rates by Violation Type



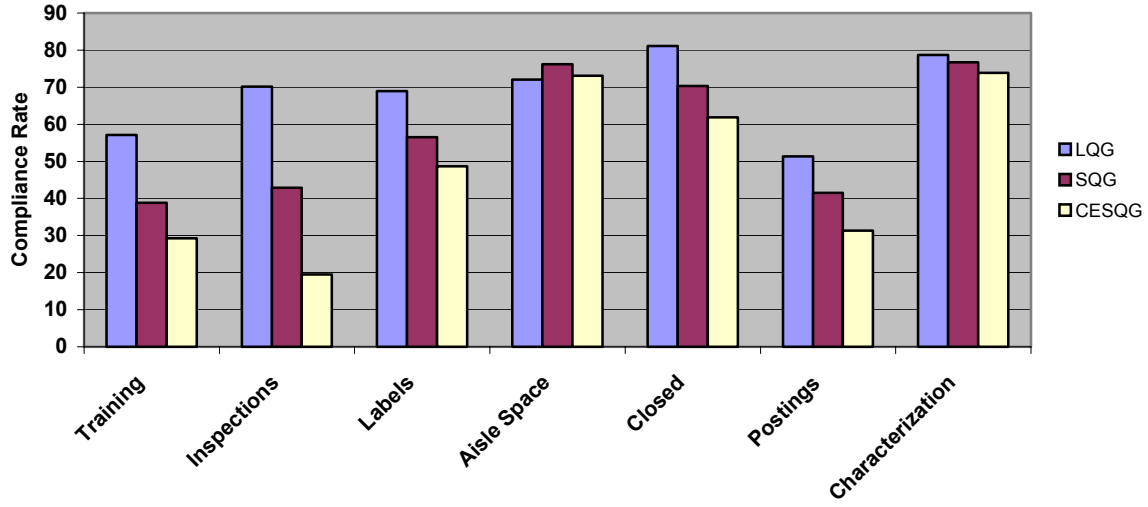
Percent Compliance by Violation Type



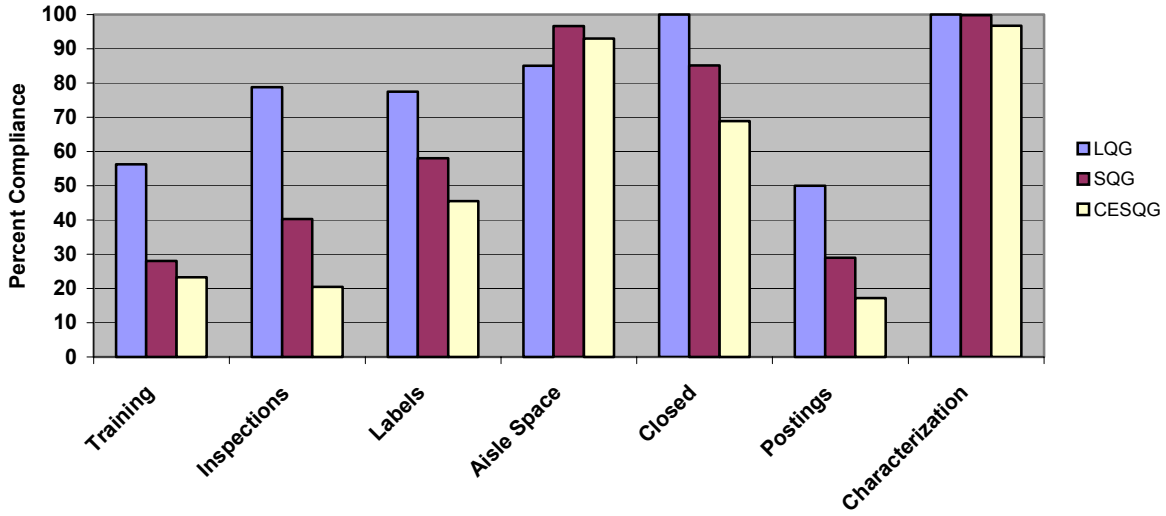
"Compliance" with Surrogate Measures



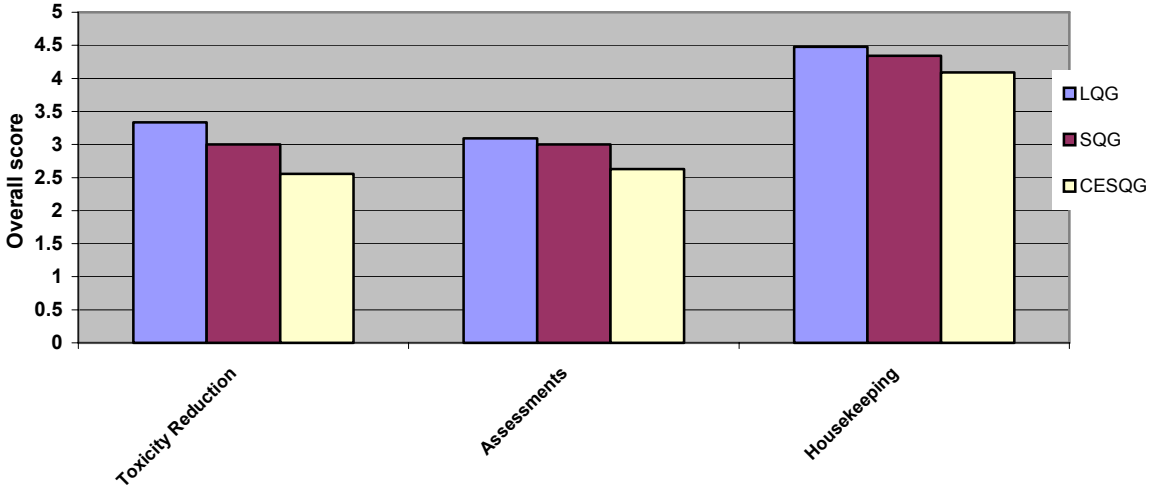
Compliance Rates by Violation Type



Percent Compliance by Violation Type



"Compliance" with Surrogate Measures



Appendix H

Categories of Existing and Future Program Analysis

Existing categories for program analysis	Future categories for program analysis	RCRIS
Hazardous waste determination	**Hazardous waste determinations**	GHW
Recycling of hazardous wastes	**Standards for generators of used oil being recycled**	WOV
-used oil violations-labeling and closed	-used oil determinations	WOV
-universal wastes	-storage requirements	WOV
	-labeling requirements	WOV
	-notification	WOV
	-AST standards	WOV
	Standards for burners of used oil being recycled	WOV
	-used oil determinations	WOV
	-notification	WOV
	Standards for marketers of used oil being recycled	WOV
	-used oil determinations	WOV
	-notification	WOV
	Standards for handlers of universal waste	UWR
	-batteries	UWR
	-lamps	UWR
	-antifreeze	UWR
	-cathode ray tubes	UWR
	-mercury containing devices	UWR
	-pesticides	UWR
On -site treatment	**Limited permit requirements**	GOR
	-expired	GOR
Generator status	**Notification requirements**	GGR
Generator notification	-generator status	GGR
Storage requirements (cont. mgmnt)	**Storage requirements**	GMC
-Leaks	-leaks	GMC
-Closed and sealed	-closed and sealed	GMC
-Impervious surface	-impervious surface	GMC
-Secondary containment	-secondary containment	GMC
	-outdoor covered	GMC
Storage time	**Storage time**	GPT
Labeling requirements	**Labeling requirements**	GPT
-haz waste, description, code, date of accum.	-hazardous waste, description and/or code	GPT
	-date of accumulation	GPT
-obscured labels	-obscured labels	GPT
Preparedness and Prevention	**Preparedness and prevention**	GPP
	-phones and alarms	GPP
	-emergency response	GPP
-fire prevention	-fire prevention/equipment	GPP
-spill control	-spill control	GPP
-aisle space	-aisle space	GPP
	Ignitables, reactives and incompatibles	GSC
-No smoking	-no smoking	GSC
	-separated	GSC
-Personnel training	**Personnel training**	GPR
	-primary and secondary E.C.	GPR
	-waste handlers	GPR
-Inspections	**Inspections**	GMC
	-containers	GMC
	-schedule and logs	GIS
-Contingency plan	**Contingency Plan**	GCP
	-plan on site	GCP
	-plan up to date	GCP
-emergency postings	-emergency postings	GCP

-Manifests	**Manifest requirements**	GMR
Tank Management	**Tank Management**	GTM
Environmental health and safety	**Environmental health and safety**	GOR
Land Disposal	**Land Disposal**	GLB
	Recordkeeping	GRR
	Small Quantity Generator Requirements	GSQ
	Disposal	GGR
	Imminent Hazard	GGR
Miscellaneous	**Miscellaneous**	GOR